



EDXL Distribution

A Crawl, Walk, Run Approach to Implementation

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What is EDXL Distribution?

- “Distribution” is an XML schema composed of tags that let you characterize and identify content without hard coupling those tags to the content structure:
 - Content detail data structures will be the subject of future efforts of the EDXL development process.
 - Content can also be other “standard” or “non-standard” content structures.
 - Or it can be an amalgam of all three.
- The “DE” is the first EDXL submission by the EIC/DHS collaboration to OASIS.
- It was been approved by vote of OASIS members OASIS in April 2006.

“Characterization” vs. “Content”

- The DE provide two specific values
 - A robust (as you want) set of tags for characterizing content for routing purposes
 - A single transport interface for multiple types of content
- Think of this value in “and/or” terms
 - A lot of the DE is optional
 - Detailed characterization is both powerful and expensive to administer
 - A DE application must accept all tags – does not have to use them (a lot of us ignore packaging labels!!)

**A lot of us ignore packaging labels
and still use content effectively!!**



"Characterization"

- Categorizes the message in any number of ways:
 - Actual, Exercise, System, Test
 - Message function (e.g. report)
 - Confidentiality
 - Language
 - Sender Role
 - Recipient Role
 - Keyword
 - Target Area
- Similar Individual Content Categorization can be applied for each content element in the message.



How did DE designers avoid the Typing Wars?

The “ValueListURN” Concept

```
<elementName>  
  <valueListUrn>valueListUrn</valueListUrn>  
  <value>value</value>  
</elemntName>
```

- The content of <valueListUrn> is the Uniform Resource Name of a published list of values and definitions, and the content of <value> is a string (which may represent a number) denoting the value itself.
- Keeps The DE out of the “category wars” by concentrating on structure.
- Allows internationalization
- Applies to <senderRole>, <recipientRole> and <keyword> and

“Content”

- Abstracting actual content from the interface provides a stable highly reusable interface, even if the data it processes change dramatically
- Parsing the content effectively is now separated from managing data transport.
- The standard provides a known, well organized structure for location of content in the message
- It does not relieve the programmer from processing the content at the destination end.

**The packages are all mailed the same way,
and are well labeled as to content, but....
“some assembly is required”**



Thank God
for xpath

Implementation: Crawl, Walk, Run

- You do not have to take full advantage of every nuance of the DE to use the DE.
- But your implementation should be built is such a way that it can grow to harness the full power.



Connect:
Mechanism
for Sharing



Process:

- Content
- Characteristics



Route:
Rule-based
Publish-subscribe
DE Routing

Implementation: Crawl

- The DHS Disaster Management Program e-Gov Initiative provides a production “crawl interface” as part of its Open Platform for Emergency Networks (OPEN).

- PostDE (mailList)
- GetDE (identifier)
- GetDEs (sinceDateTime)



- It works robustly in a high volume environment
- It provides only limited use for the gamut of tags provided by the DE.
- There are plans for enhancement, but “as-is” it enables the next step for its network member applications.

Implementation: Walk

- Walking involves two “legs,” both of which can be gradually strengthened
 - Processing Content
 - Systems can implement appropriate processing to one standard (or “de facto” standard) at a time.
 - Processing Categorization Data
 - Systems can gradually improve the granularity of the categorization that they support.
 - Sender/receiver roles and geographic area of interest are particularly useful as a starting point.



Implementation: Walk - Content Leg

- Client applications: Client systems can use xpath or similar technology to find and process known content. (Example: a known XML structure and its associated style sheet might be passed as content. An application which “knows” the content type could dynamically display the results in the form defined by the sender.)
- Redistribution: Network nodes can extract “known” content for separate forwarding (Example: a redistribution node might strip a CAP message from inside its original DE for retransmission on a non-DE CAP network).
- Actually “knowing” content is the first step in processing categorization – the second leg in a “walk” application.

Implementation: Walk – Categorization Leg

- Client application usage:
 - Importance determination – to the front, to the archives, to the trash bin
 - Sub application distribution – including warning systems personnel recall systems etc.
- Redistribution:
 - Initial rerouting rules – may be configured, vice pub sub, may be used to limit the kinds of data accepted or enforce other business rules.
 - DM OPEN will eventually provide categorization of its members by appropriate DE tags as a service. As a “directed distribution” service it will not do the route designation for its members, but it may be able to provide “potential posting lists” of its members through query based on data found in limited DE categorization features (e.g., area, organization Role).

What if a member of OPEN (or some other walk/crawl DE user) wants to employ the full power of the DE?

Implementation: Run – DE Based Publish Subscribe Routing

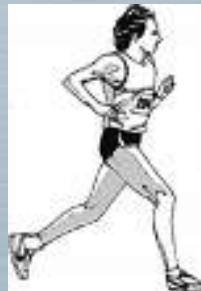
- Client applications:

- Subscribe by categorization to publish-subscribe services
- Provide interface for allowing post of published data

- Redistribution:

- Provide rule-based routing capability based on DE structured categorization
- Provide subscription interface to users
- Provide post interface for “user” systems
- Provide user management (authentication, etc) for both senders and receivers

**Lots Of
“Conditioning”**



**Powerful
Results**

Implementation: Using a “Run” Connection

- “Walk” or even “Crawl” systems can piggyback onto an EDXL router to get enhanced capability.

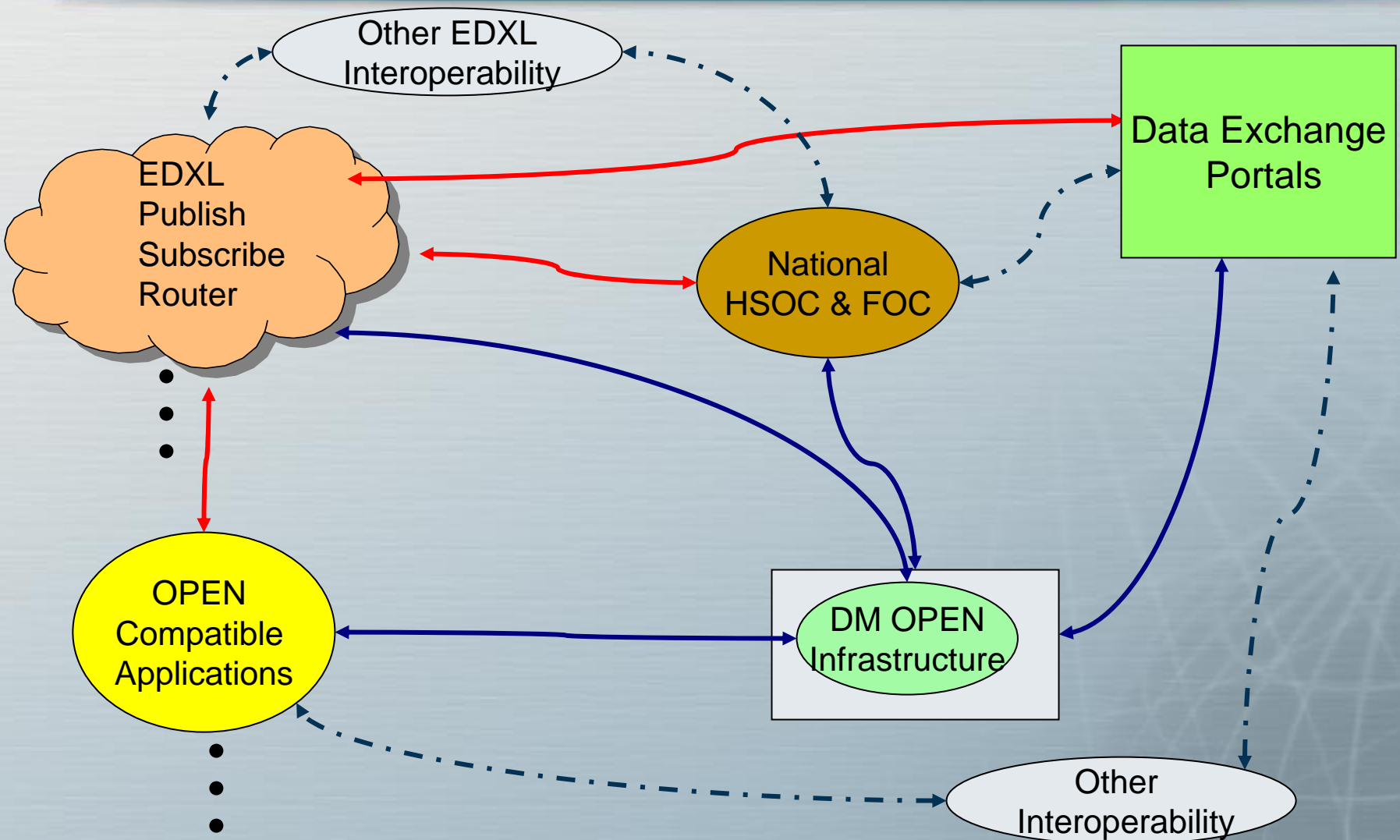
OPEN members:

- 1. Subscribe, providing membership identification**
- 2. OPEN provides WSDL for post to service**
- 3. Redistribution service posts to appropriate OPEN member**



- The price: need to comply with the router’s administrative registration needs.
- The value: reuse of power for distribution without having to put all of the complexity on the edges. (Let the router do it.)
- Resiliency: You can still do it “your way” as well.

The Resiliency of a NIMS "Combination of Networks"



Where is the SOA Pitch?

- It is all SOAP- based web services
- It is all open interfaces
- It uses standard data
- It can be registered services (does not need to be) in UDDI or similar registries

Three Examples

- I have three examples I can bring up in my XML Editor
 - A GML Point as Content
 - A CAP1.1 Message as Content
 - An N42 sample sensor Message as Content
- Our live demo will show a CAP 1.1 message within a DE that is stripped and posted to two commercial products.

More Information

EDXL DE Standard:

http://docs.oasis-open.org/emergency/edxl-de/v1.0/EDXL-DE_Spec_v1.0.pdf

DM OPEN:

<https://interop.cmiservices.org>

DM OPEN Special Interest Group:

<http://www.emforum.org/OPEN/>

Questions:

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